

rometer had fallen to 28.44 and the wind, still northeast, increased to full hurricane force. The decks were now awash under heavy breaking seas and some damage to superstructure being sustained. At 3.25 p. m. the vessel was hove to, head to sea. At 3.30 p. m. the wind shifted to southwest, force 12, barometer 28.36 inches; precipitous seas. From this time on wind and sea gradually diminished, and after being hove to for 18 hours and 35 minutes the *Chincha* was hauled back on her course.

On the morning of the 26th the hurricane passed near Bermuda, its course at that time being nearly due north, though continuing to recurve. By the morning of the 28th the center had reached latitude  $41^{\circ} 30' N.$ , longitude  $55^{\circ} W.$ , and near here the French liner *Paris* was heavily involved. Captain Pugnet stated that the wind reached a velocity of 100 miles an hour and the barometer fell from 30.08 to 28.58 inches in a few hours. The storm report from the *Paris* is included in the table. According to press reports the ship was struck by one tremendous wave that smashed heavy glass along the port promenade and injured about 40 passengers, who were struck by flying glass.

From this time until the morning of the 30th the course of the hurricane was almost due east, and at Greenwich noon of that date it had reached longitude  $22^{\circ} 30' W.$ , still exhibiting hurricane strength. After this time, however, it lost energy and speed, and its course changed abruptly to the northward. It continued for some days as a disturbance of moderate intensity west of the British Isles.

The following report of a squall in the Florida Straits was received from Mr. W. P. Page, third officer, British steamship *Reventazon*, Capt. A. C. Woodhouse, from Tela, Honduras, toward Bremerhaven:

*Monday, August 25, 9 p. m., Florida Straits,  $23^{\circ} 50' N.$ ,  $81^{\circ} 35' W.$* —Between 8 and 9 p. m. the sky gradually became overcast from all directions from west through north to east, with heavy black nimbus clouds giving every appearance of a heavy downpour of rain approaching. The wind was east-northeast, and at 9 p. m. it began to blow hard, and for an hour the wind was of force 9 to 10, in hot and cold blasts. The clouds broke up into dark patches of strato-cumulus clouds. The sea increased quickly to a rough sea. At 10 p. m. the clouds had blown over to the southwest in a dark black mass and the wind moderated as quickly as it had increased, backing to northeast, force 4. The squall was accompanied by vivid lightning. The sea moderated very quickly with the decrease in force of wind. The barometer was steady all the time at 29.80 inches (uncorrected). Air temperature,  $83^{\circ}$ ; water,  $83^{\circ}$ .

## OCEAN GALES AND STORMS, AUGUST, 1930

Vessel	Voyage		Position at time of lowest barometer		Gale began	Time of lowest barom-eter	Gale ended	Low-est bar-ometer	Direction of wind when gale began	Direction and force of wind at time of lowest barometer	Direction of wind when gale ended	Highest force of wind and direction	Shifts of wind near time of lowest barometer
	From—	To—	Latitude	Longitude									
NORTH ATLANTIC OCEAN													
Polybius, Am. S. S.	Newcastle-on-Tyne.	New Orleans.	49 08 N	7 05 W	Aug. 1	11 p., 2.	Aug. 3	Inches 29.33	SSE.	W, 10.	WNW.	W, 10.	
Reventazon, Br. S. S.	Avonmouth.	Tela, Honduras.	49 00 N	10 50 W	Aug. 4	9 p., 4.	Aug. 5	29.41	WSW.	SW, —	NW.	SW, 9.	SW-W-WNW.
Sarcozie, Am. S. S.	New York.	Bordeaux.	40 30 N	62 00 W	Aug. 20	7 p., 20.	Aug. 22	29.84	NE.	NE, 7.	SW.	NE, 9.	NE-E-SSW.
West Cobalt, Am. S. S.	New Orleans.	London.	49 30 N	12 00 W	do.	1 a., 20.	Aug. 21	29.34	SSE.	SSE, 5.	NW.	—, 10.	SSE-S-NW.
Sulaco, Br. S. S.	Rotterdam.	Jamaica.	50 12 N	2 37 W	Aug. 21	7 a., 21.	do.	23.47	SSE.	SSW, 8.	SW.	S, 9.	S-SW.
San Benito, Br. S. S.	Tela, Honduras.	Boston.	36 40 N	72 50 W	do.	Mdt., 22.	Aug. 23	29.62	NNE.	NNW, 10.	NW.	NNW, 10.	N-NW.
Chincha, Am. S. S.	Rio de Janeiro.	Baltimore.	21 17 N	56 02 W	Aug. 22	2 a., 22.	do.	29.70	SSW.	SSW, 10.	E.	—, 10.	SSW-S-E.
Viborg, Dan. S. S.	Cuba.	New York.	35 15 N	74 05 W	do.	4 p., 22.	do.	29.17	S.	NNW, 10.	NW.	NNW, 10.	NE-NNW.
Reliance, Ger. S. S.	Copenhagen.	Portland, Me.	55 25 N	34 06 W	Aug. 23	7 a., 23.	Aug. 24	29.54	W.	WNW, 7.	WNW.	NW, 9.	W-NW.
Chincha, Am. S. S.	Rio de Janeiro.	Baltimore.	27 13 N	63 16 W	Aug. 25	Noon, 25.	Aug. 26	28.36	NE.	—, 10.	SW.	NE, 12.	NE-SW.
Endicott, Am. S. S.	Galveston.	Havre.	38 50 N	62 32 W	Aug. 27	3 p., 27.	Aug. 29	28.70	ENE.	N., 12.	NW.	—, 12.	ENE-N-NNW.
Reliance, Ger. S. S.	New York.	Hamburg.	40 58 N	57 15 W	do.	7 a., 28.	Aug. 28	28.89	ENE.	N., 12.	NNW.	N, 12.	NE-N.
President Wilson, Am. S. S.	Gibraltar.	New York.	41 30 N	48 00 W	Aug. 28	6 p., 28.	Aug. 29	28.67	S.	S, 12.	N.	S, 12.	S-W-N.
Paris, Fr. S. S.	Plymouth.	do.	41 18 N	53 06 W	do.	11 a., 28.	Aug. 28	28.49	SSW.	SW, 12.	N.	SW, 12.	
Steel Exporter, Am. S. S.	Avonmouth.	Philadelphia.	41 05 N	32 35 W	Aug. 29	2 p., 29.	Aug. 30	29.37	S.	N, 12.	N.	N, 12.	
Efina, Am. S. S.	Rotterdam.	Tampa.	40 18 N	26 26 W	do.	11 p., 29.	do.	29.48	SSW.	SW, 10.	W.	SW, 12.	SSW-SW.
West Hobomac, Am. S. S.	Avonmouth.	New Orleans.	39 04 N	30 04 W	do.	6 p., 29.	Aug. 29	29.40	SW.	SW, 9.	WNW.	W, 11.	SW-W.
Resolute, Ger. S. S.	Cherbourg.	New York.	48 27 N	22 50 W	do.	—, 29.	Aug. 31	29.42	SE.	ESE, 8.	NE.	SE, 10.	SE-E-NE.
West Kyska, Am. S. S.	Antwerp.	Gulfport.	41 17 N	22 55 W	do.	4 a., 30.	Aug. 30	28.77	S.	SW, 12.	SW.	SW, 12.	S-SW.
Iroquois, Br. S. S.	Thames-haven.	Baton Rouge.	42 55 N	25 40 W	do.	—, 30.	Aug. 31	28.78	S.	SW, 8.	NNW.	S, 10.	
NORTH PACIFIC OCEAN													
Havre Maru, Jap. S. S.	Los Angeles.	Yokohama.	40 50 N	152 10 E	Aug. 8	3 a., 9.	Aug. 9	29.41	NNE.	NNE, 8.	N.	NNE, 8.	NNE-N.
Triumph, Am. M. S.	Kelung.	San Pedro.	25 30 N	128 45 E	Aug. 9	6 a., 10.	Aug. 11	29.00	N.	NW, 10.	S.	NW, 11.	NNW-WNW.
Do.	do.	do.	42 30 N	172 00 E	Aug. 19	7 a., 19.	Aug. 19	29.00	SE.	E, 12.	SE.	E, 12.	SE-E-ENE.
Pres. Monroe, Am. S. S.	Manila.	San Francisco.	22 18 N	178 27 W	Aug. 18	8 a., 18.	do.	29.73	NE.	E, 9.	E.	E, 10.	NE-ESE.
Toyama Maru, Jap. S. S.	San Francisco.	Balboa.	17 24 N	102 45 W	do.	Mdt, 18.	do.	29.63	NNE.	ESE.	S.	ESE, 9.	NNE-ESE.
Ohioan, Am. S. S.	Los Angeles.	New York.	19 30 N	105 30 W	Aug. 19	9 a., 19.	do.	29.82	NE.	SE, 8.	ESE.	SE, 9.	NE-SE-ESE.
San Marcos, Am. S. S.	Balboa.	San Pedro.	15 30 N	99 32 W	Aug. 18	4 a., 18.	Aug. 20	29.84	NE.	SE, 8.	SSE.	S, 10.	SE-S.
Stuart Dollar, Am. S. S.	Tabaco, P. I.	Los Angeles.	44 37 N	167 07 E	Aug. 19	2 p., 19.	do.	29.08	SE.	SE, 8.	SSE.	SE, 9.	N-SE.
Pres. Jefferson, Am. S. S.	Yokohama.	Honolulu.	34 20 N	154 50 E	Aug. 21	5 a., 22.	Aug. 22	29.28	N.	ESE, 10.	SE.	ESE, 10.	E-SE.
Do.	do.	do.	32 18 N	160 00 E	Aug. 23	11 a., 24.	Aug. 24	29.38	NE.	W, 6.	SW.	NNW, 9.	NW-SW.
Sylvan Arrow, Am. S. S.	San Francisco.	Nagasaki.	33 45 N	148 20 E	Aug. 19	4 a., 20.	Aug. 20	28.80	ESE.	NE, 7.	N.	N, 12.	E-NE-N.
Courageous, Am. M. S.	Shanghai.	San Pedro.	41 40 N	141 15 E	Aug. 30	Noon, 30.	Aug. 30	29.64	SSE.	S, 8.	SSW.	S, 8.	SE-SSW.
INDIAN OCEAN													
Fairfield City, Am. S. S.	Penang.	Port Said.	11 50 N	51 27 E	Aug. 11	8 a., 11.	Aug. 11	29.74	SSW.	S, 8.	S.	S, 8.	SSW-S.
Do.	do.	do.	12 48 N	45 00 E	Aug. 13	6 a., 13.	Aug. 13	29.58	SW.	SW, 9.	NW.	SW, 9.	SW-W.
SOUTH ATLANTIC OCEAN													
M. F. Elliott, Am. S. S.	Talara, Peru.	Santos, Brazil.	34 40 S	51 10 W	Aug. 21	7 p., 21.	Aug. 21	29.58	ENE.	SSE, 10.	NE.	SSE, 10.	SSE-NE.